NAVAL MEDICAL RESEARCH AND DEVELOPMENT

NEWS

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NMRC Enters Into Malaria Vaccine CRADA with Gates Foundation

In November 2011 the Naval Medical Research Center (NMRC) Malaria program entered into a Cooperative Research and Development Agreement (CRADA) with the Bill and Melinda Gates Foundation to promote the development of malaria vaccines. In this three-year cooperative effort with the Gates Foundation, NMRC will partner with Walter Reed Army Institute of Research (WRAIR) and Seattle Biomedical Research Institute (Seattle BioMed). The objective of this research is to support the identification of biomarkers of protection to guide vaccine development and deployment of vaccines to the field.

Capt. Thomas L. Richie, the Navy's principal investigator for this effort, will be responsible for the overall program management and research oversight. In addition to conducting the clinical trial, which will involve the immunization of 16 to 20 adult volunteers via mosquito bite, scientists at NMRC and WRAIR will conduct immunoassays and antigen discovery. Through a cooperative research agreement (CA), Seattle BioMed and potentially other parters will participate, emphasizing a systems biology approach for the identification of biomarkers. Dr. Ruobing Wang, a prominent malaria immunologist who worked for many years in the NMRC malaria program, will serve as the principal investigator at Seattle BioMed.

"Working with such excellent

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NMRC Commanding Officer Capt. Richard L. Haberberger, Jr. signs a CRADA that partners the NMRC Malaria Program, WRAIR and Seattle BioMed in a cooperative effort with the Bill and Melinda Gates Foundation to promote the development of malaria vaccines. From left: Mr. Ken Hemby, Ms. Roxanne Charles, Capt. Haberberger, Capt. Thomas Richie, and Capt. Eileen Villasante.

NMRC to Exhibit at 2012 MHS Conference

The Naval Medical Research Center will exhibit in the vendor area at the 2012 Military Health System Conference, January 30-February 2 at the Gaylord National Hotel and Convention Center, National Harbor, Maryland. The exhibit area will be open beginning January 31 at 9:30 a.m. and ending February 1 at 1:00 p.m. NMRC will be located in booth 241. Please stop by and learn about NMRC.

In this issue…

Commanding Officer's Message

Our outstanding value to the Navy was illustrated last year in our many contributions and accomplishments. A quick review of our 2011 newsletters (http://www.med.navy.mil/sites/nmrc/Pages/news.htm) will give you the highlights and illustrate that we are a global enterprise focused on force health protection.

The diverse capabilities and geographical locations of our laboratories reflect the broad mission and vision of NMRC. NMRC's research and development efforts impact and translate into new policies, procedures and technologies addressing the specific medical issues of the Navy and Marine Corps and other DoD personnel in operational environments. We provide a significant return on investment to the Navy and Marine Corps and the other services because we practice excellent science, we are always mission focused and our programs are cost efficient and cost effective. Our team is skilled in project management, business planning and technology development, bringing together all the scientific expertise within the NMRC enterprise in a multitude of collaborations with our many partners. We are leveraging our outstanding network of national and international research partnerships, establishing cooperative agreements with strategic security partners and engaging host nations in laboratory capability and capacity building efforts to meet our mission in support of the warfighter. The work we do is integrally woven into the fabric of Navy Medicine because the results of our research are turned into assets that enhance force health protection, support global health security and build public health.

We provide world-class, operationally relevant health and medical research solutions – anytime, anywhere. Our mission is to conduct health and medical research, development, testing, evaluation, and surveillance to enhance the operational readiness and performance of DoD personnel worldwide.

Commanding Officer sends,
Richard L. Haberberger, Jr.
CAPT, MSC, USN

NAMRU-2 Partner in Southeast Asia Celebrates 120 Years

This past November, staff from the U.S. Naval Medical Research Unit No. 2 (NAMRU-2) attended the 120th anniversary celebration of Pasteur Institute in Ho Chi Minh City (PIHCMC). The institute was the first overseas branch of the Pasteur Institute in Paris, France and was founded by Albert Calmette in Saigon in 1891. The institute became part of the national health system in Vietnam in 1975, but retained the name "Pasteur Institute" and is responsible for the management of public health in the southern region of Vietnam.

NAMRU-2 has been engaged in cooperative infectious disease and surveillance efforts with PIHCMC since 1993, including disease outbreak investigations, hospital and field survey for HEV, leptospirosis, and malaria drug resistance studies as well as conducting several training workshops in Vietnam.

Dr. Tran Ngoc Huu, Director of Pasteur Institute Ho Chi Minh City, providing the opening remarks at the scientific conference marking the 120th anniversary of the institute in Vietnam.

NAMRU-2 and PIHCMC workshop in 2007 evaluating the deployment of electronic disease surveillance systems to nine hospitals in southern Vietnam.

From 2001 to 2007, NAMRU-2 and PIHCMC conducted a pilot study evaluating the use of syndromic -based electronic biosurveillance systems in nine hospitals in southern Vietnam. NAMRU-2 is continuing activities with PICHMC focusing on dengue surveillance studies in collaboration with the Duke University/ National University of Singapore Program on Emerging Infectious Diseases. NAMRU-2 is also establishing collaborative research studies with the Military Medical Department of the Ministry of Defense of Vietnam. These cooperative activities will focus on malaria drug resistance studies and surveillance for acute febrile respiratory infections.

NMRC Enters Into Malaria Vaccine CRADA with Gates Foundation

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partners at WRAIR and Seattle BioMed will be the highlight of this project," stated Richie. "We are very grateful to the Gates Foundation for this opportunity."

This unique partnership for malaria immunization via mosquito bite with radiation-attenuated *Plasmodium falciparum* sporozoites investigates a vaccine approach that kills the deadly *P. falciparum* parasite during its first few days of development.

The goal of this project is to significantly advance malaria vaccine development by characterizing the nature of pre-erythrocytic stage protective immunity and targeted antigens. Characterizing the immune profiles of humans protected against malaria following immunization with the radiation-attenuated *P. falciparum* sporozoites will address both the Foundation's charitable mission to eradicate malaria from the poorest countries in the world and the U.S. military's research and development priority to protect military personnel and travelers from endemic disease.

Malaria, caused by the protozoan *Plasmodium*, is responsible for more suffering and death across the world than any other parasitic disease. It is a blood disease leading to anemia, prostration, coma, low birth weight and poor school performance that affects as many as 225 million people annually. According to the World Health Organization, 781,000 people die each year from the infection.

U.S. military forces are at great risk of developing malaria while deployed in endemic areas. In fact, more U.S. military person-days were lost to malaria than to bullets during every military campaign fought in malaria-endemic regions during the 20th century.

Dayton Lab Blazes Trail in Unmanned Systems Human Factors RDT&E

By Dr. Rick Arnold, NAMRU-Dayton

Two Sailors assigned to the "Firebees" of Fleet Composite Squadron Six (VC-6), wait for the signal to release an RQ-2B Pioneer Unmanned Aerial Vehicle prior to its flight demonstration. Photo by Photographer's Mate 2nd Class Daniel J. McLain.

Recently researchers at the Naval Medical Research Unit-Dayton (NAMRU-Dayton) have positioned the laboratory to take a leading role in Navy and Department of Defense unmanned systems human factors research. In the late 1990s, the Naval Aerospace Medical Research Laboratory (NAMRL) conducted early research on selection testing of RQ-2 Pioneer Unmanned Aircraft Systems (UAS) operators. After moving to Wright-Patterson Air Force Base last year to become the Aeromedical Directorate of NAMRU-Dayton, the lab continues to be a leading force in Navy and DoD UAS human factors research. On November 7-8, 2011, NAMRU-Dayton hosted a tri-service workshop on UAS human factors research, development, test, and engineering (RDT&E). A range of critical research topics were identified over the course of the workshop. Among the most pressing issues identified was the need for new research on UAS operator and crew selection.

Though the previous NAMRL research was quite successful in developing effective tests to select qualified Pioneer UAS operator candidates, the significant changes that have occurred in UAS vehicles, interfaces and concepts of operations during the intervening decade, coupled with the retirement of Pioneer in 2007, suggest the tests proven effective previously may no longer be relevant for selecting operators of such advanced systems as AACUS, BAMS, Fire Scout or UCLASS.

To address this uncertainty, NAMRU-Dayton researchers, in collaboration with researchers at the Naval Air Warfare Center (Aircraft and Training System Divisions), recently conducted a large-scale job-task analysis spanning multiple unmanned air vehicles and crew positions, including BAMS, BAMS-D, Fire Scout, Raven-B, Shadow, Scan Eagle, and others. The project has recently concluded, and preliminary results suggest that operators of these newer systems are required to possess a very different skill set from their Pioneer predecessors. Preliminary analyses suggest that UAS operator knowledge, skills, abilities and other personal characteristics (KSAOs) related to communication, teamwork and decision making play the most significant roles in current UAS operations. Across all platforms studied, the top-rated operator KSAOs included such traits as oral comprehension, oral expression, teamwork skills, written comprehension, dependability, accountability, self-discipline, critical thinking and task prioritization. In contrast to critical Pioneer KSAOs, physical and psychomotor skills were found to be relatively less important. For example, hand-eye coordination, a skill critical for operation of the Pioneer vehicle, ranked only 59th of 66 KSAOs rated in this recent study of advanced and highly automated unmanned systems.

In the late 1990s, NAMRL developed an operator selection test for the RQ-2 Pioneer, shown above.

NAMRU-San Antonio Finishes Year of Multitasking Missions

By Joe N. Wiggins, Public Affairs Officer, NAMRU-San Antonio

Capt. Vincent DeInnocentiis (center), commanding officer, and Capt. Steven L. Sidoff (left) give a tour of one of the NAMRU-San Antonio labs to Lt. Col. Elon Glassberg (right), Israel Defense Force. Glassberg was briefed on the results of a recent project conducted at NAMRU-San Antonio. Photo by Joe N. Wiggins.

Many military units have become accustomed to adapting to changing, challenging or even difficult years from time to time. However, few units in recent memory have had the kind of year just completed by a growing biomedical military unit in San Antonio, Texas.

The major 2011 events for the Naval Medical Research Unit-San Antonio (NAMRU-San Antonio) have capped a six-year process that included moving all facilities to a new location, adding personnel and missions and meeting requirements of the 2005 Base Realignment and Closure (BRAC) Commission on time. The changes have put the unit through its paces like never before in its history.

While the intensity and accelerated tempo of the move and bringing new staff on board have begun to subside, the commanding officer points to future results that will be coming out of the team.

"We've clearly seen increased efficiencies in working with the Army and Air Force," said DeInnocentiis. "The joint world of combat casualty care we now work in, combined with continuing budget concerns to make every dollar count, indicates what we did here is the right direction for the future. Not only do we strongly believe this after using these facilities, we are seeing an increased desire for collaboration among our DoD and academic partners to work with our team."

The men and women of NAMRU-San Antonio recently posed outside the new Tri-Service Research Laboratory to wish NAMRU-Cairo a happy 65th anniversary. NAMRU-San Antonio has recently grown from 21 to more than 80 scientists, technicians and support staff as their mission has moved, grown and added responsibilities. Photo by Joe N. Wiggins.

Senior leaders were impressed with the results during a tour and a September ribbon-cutting ceremony.

"We witnessed the opening of these facilities [at NAMRU-San Antonio] that resulted from that [2005] BRAC decision," said Rear Adm. Bruce Doll, the director of Navy medicine research at the Bureau of Medicine and Surgery. "Not only is this lab destined to produce even more of the kind of results that came out of the previous location, this building accomplishes savings we could have never achieved in our previous facilities."

The facilities moved from three separate locations at the now-closed Air Force section of Brooks City-Base, Texas, the Forest Glen Annex in Silver Spring, Md., and the Naval Station Great Lakes, Ill. to two new buildings at Fort Sam Houston. Research is now conducted in one of two new facilities: the Tri-Service Research Laboratory and the Battlefield Health and Trauma Research Institute. Much of this was overseen by the unit's commanding officer, Capt. Vincent DeInnocentiis.

"We completed our six-year task of consolidating missions from three geo-

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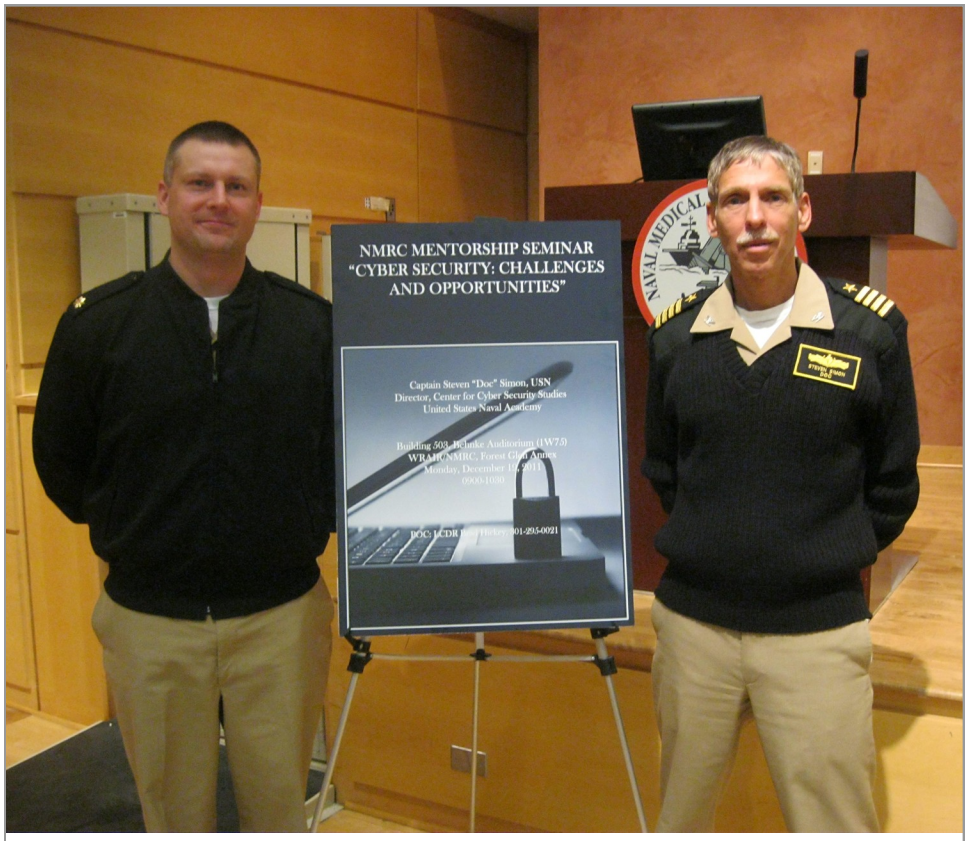
NMRC Hosts Mentorship Seminar on Cybersecurity Challenges

The Naval Medical Research Center (NMRC) Mentorship Seminar Series hosted its first seminar, which featured Capt. Steven "Doc" Simon, director of the Center for Cyber Securities at the United States Naval Academy in Annapolis, Md. December 19, 2011. Simon's topic was Cyber Security: Challenges and Opportunities. He discussed the importance of cyber security and information dominance in the context of modern warfare, cyber terrorism and cyber crime.

Simon educated the audience on what the term cyberspace means. The term, coined by author William Gibson, does not have a widely adopted definition, but it is used ubiquitously. In short, Gibson defined cyberspace as a "consensual hallucination of data."

Simon explained that in cyberspace there are preventive measures that need to be taken to be protected from cybercriminals and attacks. "Eighty-five to ninety percent of intrusions are caused by someone not doing what they are supposed to by not securing their computers," said Simon.



Lt. Cmdr. Brad Hickey (left), the NMRC Mentorship Program Coordinator, and guest lecturer and subject matter expert on Cyber Security, Capt. Steven "Doc" Simon.

Technology is advancing, providing opportunities for cyber criminals. The Department of Defense (DoD) is educating the military and civilian workforce on how to stand guard against cybercrimes. They are improving the security of software, hardening systems, and refining the strategy to protect mission-critical data. Threats of cyber terrorism are becoming more difficult to combat. The ability to mount a strike and protect the infrastructure is vitally important in the event there is a threat against computers or networks with the intention to cause harm. Strengthening the U.S. cyber infrastructure against cyber terrorism will help to combat cyber threats.

The average cost for an individual to recover from a cyber attack is $2000. For a business to recover, it can cost almost $1 million for each occurrence. This is a huge expense to pay when there are ways to prevent cybercrimes from happening. Simon pointed out five myths that people believe when it comes to cyberspace:

- Consumer protection exists in cyberspace.
- Firewalls and virus scanners protect computers and enterprises.
- The government has the solution and will protect me.
- Physical assets are more valuable than information.
- Laws are keeping pace with technological innovation.

The topic generated insightful questions from the audience about the security of cyberspace and what the military and the DoD are doing about it. The military is providing awareness to the problem and how not to become a victim of cybercrime. Beware of phishing scams and unsolicited emails that request secure information or instructions to download software. Being cognizant of fraudulent emails and sites can prevent a malicious virus from gaining access to your computer system.

Lt. Cmdr. Brad Hickey, the NMRC mentorship program coordinator, will bring in guest lecturers for future seminars. Each seminar will feature a topic relevant to the expansion of professional development that is critical to the achievement of NMRC's unified vision: world-class, operationally relevant health and medical research solutions—anytime, anywhere. The purpose of the NMRC Mentorship Program is to expand leadership, interpersonal and technical skills throughout the organization.

NAMRU-San Antonio Finishes Year of Multitasking Missions

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graphic locations around the country to our new facilities at Fort Sam Houston on schedule and within the budget" said DeInnocentiis.

While completing this move and expansion, the unit never interrupted their mission of biomedical research. When asked about NAMRU-San Antonio's major accomplishments, DeInnocentiis quickly cited the focus on research to support warfighters in the field.

"Our biomedical research for the Navy is too important to stop or delay the results from getting to the field," he said. "While completing the moves and consolidation, we didn't interrupt our research for Sailors, Marines and other warfighters in the field."

When the new facilities were only in the planning stages, their senior civilian thought the ultimate outcome would have part of the mission moved to another location.

"I was surprised by the final 2005 BRAC decision," said Dr. John A. D'Andrea, science advisor to NAMRU-San Antonio. "I thought the final decision would be to move the directed energy component to Wright-Patterson Air Force Base, Ohio. We ultimately ended up with a 181,000 square foot facility that kept our missions here and allowed us to increase the number of products while meeting the BRAC law."

Another major area of change has been the growth in the number of personnel assigned to NAMRU-San Antonio. The unit has grown from a small tenant group of 21 people into a Navy command organization of more than 80 scientists, technicians and support staff engaged in biomedical research.

"A lot of people had key roles in making this possible," said DeInnocentiis. "We've successfully completed our growth in numbers to meet our mission of support to Sailors and Marines around the world."

Many of the people who were at NAMRU-San Antonio during the process were very involved and worked closely with the U.S. Army Corps of Engineers and the prime contractors on the Tri-Service Research Laboratory and the Battlefield Health and Trauma building to produce useful tools.

CO of Busy Unit Reflects on Six-year Mission

While many senior officers complete an assignment every three years and move to a new command, one Medical Service Corps senior officer has worked on a six-year mission that took him across several states, units and commands.

While serving as the Officer in Charge of the Naval Health Research Center Detachment, Directed Energy Bioeffects Laboratory at Brooks City-Base, Texas, Capt. Vincent DeInnocentiis learned the 2005 Base Realignment and Closure (BRAC) Commission planned to close the base and drastically alter the unit's mission. The original proposal was for the unit to move to Wright-Patterson Air Force Base near Dayton, Ohio.

The proposed move was later changed and finalized to Fort Sam Houston, Texas, and also dictated an expansion in the unit's size and mission. While at Brooks, DeInnocentiis began the transition process to move the unit. After leaving the Texas lab in 2006 to serve as the executive officer of the Naval Medical Research Center in Silver Spring, Md., he later became the BRAC Transition Officer – San Antonio area for Navy Medical Research and Development in September 2008.

In this position, he coordinated all BRAC actions related to the Navy Medical R&D Enterprise as the direct on-site representative. In that role, he coordinated the transition and relocation of three Navy Medical R&D components to San Antonio area while continuing the implementation of the BRAC decision's effect on the Texas unit.

After becoming the commanding officer of the new Naval Medical Research Unit-San Antonio in May 2009, DeInnocentiis oversaw the unit's mission of combat casualty care, dental and directed energy biomedical research. As part of that unit and the transition it was going through, he not only led the unit through the relocation to an Army post several miles away, he also watched his team grow the staff from 20 to more than 80 people.

In looking back, he made several observations about the recently completed process.

"My major goal in this transition and growth was not to interrupt the science we were doing to support the Navy mission and warfighters in the field," said DeInnocentiis. "We had several challenging issues to deal with in order for everyone to have the proper work space in the new facility, and I believed it was crucial to keep everyone connected with the proper phones and computers."

He also pointed to the team of professionals he led during this transition from 2005 to 2011.

"At one point, it looked as if we would be down and have to interrupt our work," he said. "But, with a lot of teamwork and dedicated people, we actually increased the number of publications and our presentations before various professional groups."

As the commanding officer of a Navy tenant unit on a growing Army post, DeInnocentiis also had to work with the new landlords to ensure a successful transition. "I worked with the Army Institute of Surgical Research to ensure our labs were set up properly to continue and expand our research. This required a lot of hands-on work between my staff and the various Army components responsible for completing the new facilities."

The transition has also brought about some improvements not immediately apparent when the BRAC decision was announced. "We have increased our efficiency while becoming more aware of the benefits of working with the Army and the Air Force.," he added.

NMRC Headquarters Hosts Laboratory Commanders' Conference

Capt. Richard L Haberberger, Jr., commanding officer of the Naval Medical Research Center (NMRC), hosted the laboratory commanders' conference in Silver Spring, Md., December 9, 2011. The purpose of the conference was to discuss significant developing issues, the business of military medical research and to share perspectives of command leadership with NMRC enterprise-wide assets.

"It is important for all the lab commanders to meet face to face to discuss strategic issues facing our labs and other areas of shared concern that exist between the labs," said Haberberger. "Especially now as we face some very interesting challenges related to the economy that will have a direct impact on our research and our mission in the current and coming years. Our discussions were focused on solutions and the way ahead to meeting our mission to support our sailors and Marines and enhance operational and medical readiness."

Laboratory commanders and key staff met December 9, 2011, to discuss strategic issues facing the labs and to focus on solutions that will enhance operational and medical readiness to support sailors and Marines.

Haberberger welcomed the nearly 30 attendees – commanders and key staff representing the eight laboratories within and outside the continental United States that make up the NMRC enterprise. The conference was held after the American Society of Tropical Medicine and Hygiene annual meeting in Philadelphia to accommodate the OCONUS commanders' travel schedules.

Briefs during the day included a variety of key topics. Each commander presented a laboratory overview focused on fiscal, facility, manpower, strategic research goals and current status, and outstanding issues. Other briefs covered a proposed enterprise database developed by the Naval Health Research Center (NHRC) called the Research Project Manager, pending financial management changes, and a proposed human subjects research data management database. Discussions and a question and answer session were held after each brief.

Laboratories represented were NMRC, Silver Spring, Md.; NHRC, San Diego, Calif.; the Naval Submarine Medical Research Laboratory, Groton, Conn.; the Naval Medical Research Unit-Dayton, Wright Patterson Air Force Base, Ohio; the Naval Medical Research Unit-San Antonio, Fort Sam Houston, Texas; the U.S. Naval Medical Research Unit No. 2 Pacific, Pearl Harbor, Hawaii; the U.S. Naval Medical Research Unit No. 3, Cairo, Egypt; and the U.S. Naval Medical Research Unit No. 6, Lima, Peru.

NMRC Partners in Convalescent Influenza Plasma Clinical Trial

The National Institute of Allergy and Infectious Diseases (NIAID) is sponsoring a phase 2 clinical trial at nearly 40 sites to assess the safety, efficacy and pharmacokinetics of convalescent influenza plasma in patients with serious influenza.

The Naval Medical Research Center (NMRC) is coordinating the participation of four Department of Defense hospitals in the phase 2 trials - Naval Hospital Portsmouth, Naval Medical Center San Diego, Madigan Army Medical Center, and Walter Reed National Military Medical Center (WRNMMC), with the Armed Services Blood Bank Center at WRNMMC. The national study should be completed in the winter of 2013 with results reported in the spring.

"Patients hospitalized with influenza are at risk for severe disease. These are the volunteers we will be recruiting for the study," said Lt. Cmdr. Janine Danko, the principal investigator on the study and an internist and infectious diseases subspecialist at NMRC. "Volunteers will receive convalescent influenza plasma in addition to standard care or standard care alone. We will follow them for 28 days; if the patient is discharged from the hospital the follow up will be done in the clinic."

According to Dr. Thomas C. Luke, NMRC lead investigator on this study, convalescent influenza plasma has antibodies that can neutralize the influenza viruses. In 1918 during the Spanish flu pandemic, the U.S. military had over 50,000 deaths. Convalescent influenza plasma obtained from service members that had recovered from Spanish flu was given to patients with severe influenza and was reported to reduce mortality by up to 50 percent.

The U.S. military and Navy produces hundreds of thousands of FDA-licensed frozen plasma units every year during routine blood drives at military installations. Lt. Gabriel Defang, another investigator at NMRC, has determined that a large proportion of this plasma has high anti-influenza antibody levels. Defang believes that this is because almost all Navy and Marine Corps personnel receive their annual influenza vaccine. Danko notes that Navy and Marine Corps personnel who donate their blood during routine blood drives could provide a life-saving treatment to their shipmates and beneficiaries who have the misfortune of contracting severe influenza.

"It's a privilege to participate in research that is supported by the U.S. Navy using plasma that is being produced by U.S. Navy blood banks after being donated by sailors and Marines during routine blood drives. This is a team effort and I want to give a Bravo Zulu to all those who are involved," said Danko.

Happy New Year from the NMRC Ombudsman!

I would like to wish everyone a very Happy New Year and welcome everyone back from what I hope was a restful and recuperative holiday season. Hopefully, we have all returned ready to make 2012 a very fulfilling and successful year in both our personal and our professional lives.

Remember: You Are Always Networking: In our current economy, we probably all know someone who is looking for a job. For the mobile military career, spouses are often looking ahead for the next great opportunity. Or maybe you just want a change. Remember that EVERY encounter is a networking opportunity. Each person you communicate with knows someone else. More than 60 percent of jobs are found this way. Consider the following as you network your way to your new job:

- Be Purposeful. Define what you will accomplish by networking and what information you need to be successful.
- Be Specific. Know yourself (education, skill sets, experience) and prepare a 1-3 minute presentation so that people can get to know you and the type of job you want to find.
- Be Prepared. Identify your network; attend meetings and gatherings in your field of interest. Getting involved is the best way to meet people that may be able to help you in your career.
- Be Professional. Ask for advice instead of asking for a job. Focus on asking one thing at a time that is relevant to your area of interest. Remember your professional "presence" when using social media such as Facebook and Twitter.
- Be Proactive. Stay organized by keeping a list of your contacts and update it regularly. Send thank you emails to those who offered advice or referrals. Always ask if you can follow up with a phone call.
- Be Authentic. Always be yourself and do things at your own pace.

Family Resiliency: Resilience is the ability to adapt to change and maintain stability during stressful situations. Faced with deployments, relocations and transitions, Navy families build resiliency on a daily basis. Strengths of resilient families include cohesiveness, effective communication and adaptability. Remember to make plans for fun activities with friends and family and try to have contact with your deployed family member to make a great start to the new year. Check out the booklet "Bouncing Back — Staying Resilient through the Challenges of Life" from Military One Source (https://www.militaryonesourceeap.org/achievesolutions/en/militaryonesource/login.do) – search for "Bouncing Back" after you log in.

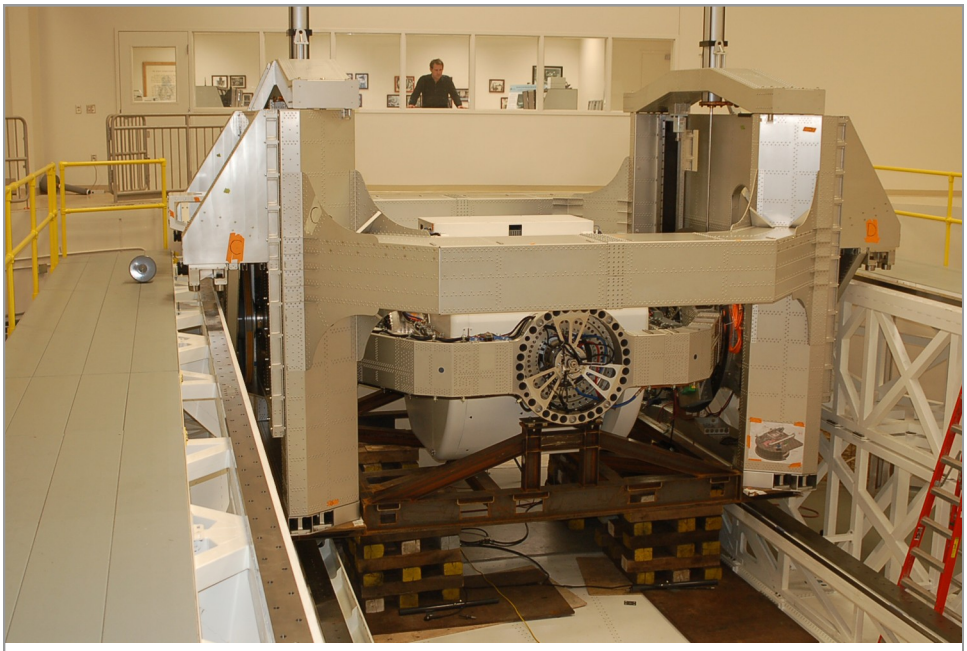
If you need more information on these or any other resources, please contact me at angela.prouty@med.navy.mil or 217-722-4981.

Angela Prouty
Ombudsman, NMRC

NAMRU-Dayton's Disorientation Research Device Nears Completion

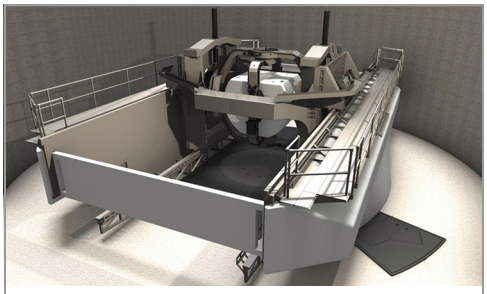
By Roy Dory, NAMRU-Dayton

The design build of the Disorientation Research Device (DRD) at the Naval Medical Research Unit-Dayton (NAMRU-Dayton) is nearing its completion, currently slated for late March 2012. The device, built by Environmental Tectonics Corporation (ETC), Philadelphia, Pa., will be the newest in NAMRU-Dayton's portfolio of motion-based platforms. The state-of-the-art device will afford NAMRU-Dayton researchers the ability to orient individuals any direction relative to a precisely controlled acceleration environment to recreate forces and conditions experienced by pilots and aircrew in the operational setting. This unique combination of motions will assist researchers in addressing some of the most vexing fleet aeromedical problems.



The Disorientation Research Device in its final construction phase. The horizontal sled assembly, shown being integrated with the 50 foot long main arm structure.

Installation of the DRD at NAMRU-Dayton began in December 2010 in coordination with the military construction efforts of the U.S. Army Corps of Engineers and their construction contractor at the Maj. Gen. Harry George Armstrong Complex at Wright-Patterson Air Force Base. Early access allowed for a seamless integration of key device components with the facility and ensured appropriate facility infrastructure were in place to support this highly specialized equipment.



Artist rendition of the completed DRD.

The past quarter has witnessed an acceleration of DRD installation efforts, and several significant milestones were achieved. ETC employed a two-phase system during construction of the device, allowing the capsule and several large subsystems to be fabricated, assembled and tested at ETC's facility in parallel with the construction of the main device's arm structures at NAMRU-Dayton. In November, ETC successfully finished testing its in-house equipment and the 40,000-pound assembly was delivered to NAMRU-Dayton. This shipment signifies the delivery of the last major DRD component as well as the merging of the two parallel construction phases. Over the next three months, the assemblies from each of the two construction phases will be integrated with one another and testing of multiple axes of motion will begin.

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